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TRANSACTIONS
OF THE
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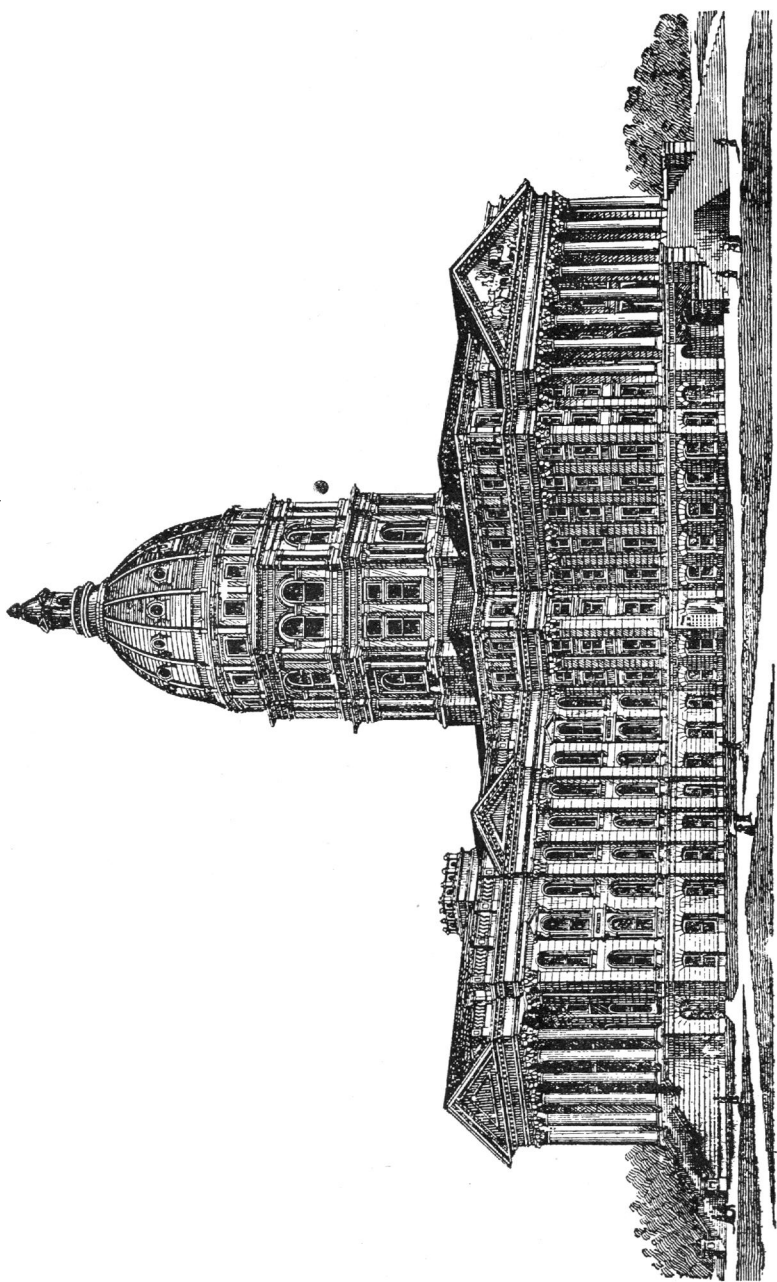
Volumes XXIII and XXIV.

CONTAINS
SECRETARY'S MINUTES OF FORTY-SECOND AND FORTY-THIRD
ANNUAL MEETINGS; LIST OF OFFICERS; MEMBERSHIP
LIST JANUARY 1, 1911; SOME PAPERS PRESENTED
AT LAST MEETINGS; NECROLOGY; AND
INDEX OF VOLS. XXIII AND XXIV.

January, 1911.

STATE PRINTING OFFICE,
TOPEKA, 1911.

3-5170



STATE CAPITOL, TOPEKA.

TRANSACTIONS
OF THE
KANSAS
ACADEMY OF SCIENCE.

Volumes XXIII and XXIV.

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1894.....	L. E. Sayre.		

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1885.....	E. L. Nichols and G. H. Failyer.	1899.....	A. S. Hitchcock and J. R. Mead.
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1888.....	E. H. S. Bailey and T. H. Dinsmore, jr.		

1901.....	J. C. Cooper and L. C. Wooster.	1907.....	E. Haworth and F. B. Dains.
1902.....	Edward Bartow and J. A. Yates.	1908.....	F. B. Dains and J. M. McWharf.
1903.....	Edward Bartow and J. A. Yates.	1909.....	J. M. McWharf and A. J. Smith.
1904.....	L. C. Wooster and B. F. Eyer.	1910.....	J. M. McWharf and A. J. Smith.
1905.....	F. W. Bushong and W. A. Harshbarger.	1911.....	A. J. Smith and J. E. Welin.
1906.....	B. F. Eyer and J. E. Welin.		

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1890-'92.....	E. H. S. Bailey.	1905-'11.....	J. T. Lovewell.

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1878-'83.....	R. J. Brown.	1901,'02.....	E. C. Franklin.
1884,'85.....	A. H. Thompson.	1903-'08.....	Alva J. Smith.
1886-'90.....	I. D. Graham.	1909-'11.....	F. W. Bushong.
1891.....	F. O. Marvin.		

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January 1, 1911.

Dates signify date of election to membership in the Academy.

HONORARY MEMBERS.

- G. P. Grimsley, Ph. D., 1904, asst. state geologist, Morgantown, W. Va.
Edw. L. Nichols, Ph. D., 1897, Cornell Univ., Ithaca, N. Y.
W. S. Franklin, Sc. D., 1897, Lehigh Univ., South Bethlehem, Pa.
Geo. Wagner, Phar. D., 1904, Univ. of Wisconsin, Madison, Wis.
S. W. Williston, A. M., M. D., Ph. D., 1902, professor of paleontology,
Univ. of Chicago, Chicago, Ill.

ASSOCIATE MEMBERS.

- Mrs. R. J. Brown, 1903, Leavenworth.
Mrs. Mary Savage, 1897, Lawrence.

LIFE MEMBERS.

- E. H. S. Bailey, Ph. D., 1883, Univ. of Kansas, Lawrence.
Edward Bartow, Ph. D., 1898, director of water survey, Urbana, Ill.
J. C. Cooper, 1877, mineralogist, Topeka.
F. W. Cragin, Ph. D., 1880, economic, geologic and historical research,
Colorado Springs, Col.
Lewis Lindsay Dyche, M. S., 1881, professor of systematic zoölogy and
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Univ. of Kansas, Lawrence.
Geo. H. Failyer, M. Sc., 1879, chemist, Dept. of Agr., Washington, D. C.
E. C. Franklin, Ph. D., 1884, Stanford Univ., Stanford, Cal.
I. D. Graham, 1879, with *Kansas Farmer*, Topeka.
Wm. Ashbrook Harshbarger, B. S., 1900, professor of mathematics, Wash-
burn Coll., Topeka.
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Warren Knaus, M. Sc., 1884, entomologist, editor and publisher, Mc-
Pherson.
D. E. Lantz, M. Sc., 1887, biological survey, Washington, D. C.
J. T. Lovewell, Ph. D., 1878, chemist, Topeka.
F. O. Marvin, A. M., 1884, Univ. of Kansas, Lawrence.
J. R. Mead,* 1879, Wichita.
Ephraim Miller, A. B., A. M., Ph. D., 1873, Pasadena, Cal.
E. A. Popenoe, A. M., 1872, entomologist, Topeka.
L. E. Sayre, Ph. M., 1885, Univ. of Kansas, Lawrence.
Alva J. Smith, 1903, city engineer, Emporia.
B. B. Smyth, 1880, curator Goss Ornith. Coll., Topeka.

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- C. H. Sternberg, 1896, explorer and collector, Lawrence.
 A. H. Thompson, D. D. S., 1873, Topeka.
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 S. W. Williston, Ph. D., 1880, Univ. of Chicago, Chicago, Ill.

ANNUAL MEMBERS.

- Frank G. Agrelius, A. M., 1905, State Normal School, Emporia.
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 W. M. Bailey, 1906, teacher, Holton.
 Harvey W. Baker, 1902, florist, Manhattan.
 Benj. P. Baker, 1909, student, Agr. Coll., Manhattan.
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 Frank G. Bedell, 1904, Dodge City.
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 Rev. John T. Copley, 1903, clergyman, Manhattan.
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 Frank Burnett Dains, Ph. D., 1902, professor of chemistry, Univ. of Kansas, Lawrence.
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- John J. Jewett, 1902, physicist, San Diego, Cal.
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- F. E. Jones, 1909, manual training school, Lawrence.
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- H. H. King, A. B., A. M., 1909, asst. professor of chemistry, Agr. Coll., Manhattan.
- Leslie A. Kenoyer, 1906, Independence.
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- Grace R. Meeker, 1899, botanist, Ottawa.
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- S. T. Millard, M. D., 1909, physician and surgeon, Topeka.
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- Roy L. Moodie, Ph. D., 1909, instructor, Univ. of Kansas, Lawrence.
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 J. B. Parker, 1909, Agr. Coll., Manhattan.
 Frank Patrick, 1903, microscopist, Kansas City, Mo.
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 Wm. S. Prout, 1904, medical student, hospital, Topeka.
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 D. C. Schaffner, 1903, Coll. of Emporia, Emporia.
 John H. Schaffner, A. M., M. S., 1902, professor of botany, Univ. of Ohio, Columbus, O.
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 Edwin Taylor Shelly, M. D., 1902, physician, Atchison.
 Claude J. Shirk, A. M., M. S., 1905, instructor in physics and chemistry, McPherson.
 J. A. G. Shirk, 1904, professor of physics, Ottawa Univ., Ottawa.
 Eva Schley, A. B., 1903, natural history, high school, Topeka.
 Ralph C. Shuey, 1905, Univ. of Idaho, Moscow, Idaho.
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 S. G. Stewart, M. D., 1904, physician and surgeon, Topeka.
 Chas. M. Sterling, A. B., 1904, Univ. of Kansas, Lawrence.
 E. F. Stimpson, 1904, Univ. of Kansas, Lawrence.
 Edgar H. Thomas, 1907, State Normal School, Emporia.
 F. J. Titt, B. S., 1898, Kingfisher Coll., Kingfisher, Okla.
 J. E. Todd, A. M., 1907, professor of geology, Univ. of Kansas, Lawrence.
 David Train, 1907, student, Bethany Coll., Lindsborg.
 J. F. True, 1909, stockman, Topeka.
 E. S. Tucker, 1904, Bureau of Entomology, Dept. Agriculture, Washington, D. C., Dallas, Tex.
 W. H. Twenhofel, 1910, professor of geology and paleontology, Univ. of Kansas, Lawrence.
 Edith M. Twiss, Ph. D., 1910, dean of women, Washburn Coll., Topeka.
 W. A. VanVorhis, 1907, State Normal School, Emporia.

- P. F. Walker, 1905, Univ. of Kansas, Lawrence.
J. D. Walters, M. S., 1894, Agr. Coll., Manhattan.
E. C. Warfel, A. M., 1909, lawyer, Wamego.
H. J. Waters, B. Sc., 1909, president Agr. Coll., Manhattan.
J. E. Welin, A. M., M. S., 1899, professor of chemistry, Bethany Coll., Lindsborg.
Archie J. Weith, 1906, Pfaudler Company, Rochester, N. Y.
J. B. Whelan, 1909, professor of chemistry, Agr. Coll., Manhattan.
E. A. White, 1909, chemist, Kansas City, Mo.
Stanley D. Wilson, B. A., 1910, instructor in chemistry, Washburn Coll., Topeka.
W. B. Wilson, B. S., M. S., 1903, professor of biology, Ottawa Univ., Ottawa.
John A. Wilson, 1909, science teacher, Ely, Minn.
C. H. Withington, B. S., 1903, high school, Topeka.
T. M. Wood, B. S., 1909, instructor, M. T. S., Pittsburg.
H. I. Woods, M. S., 1902, professor physics and astronomy, Washburn Coll., Topeka.
Lyman C. Wooster, Ph. D., 1897, State Normal School, Emporia.
J. A. Yates, M. S., 1897, geologist, M. T. S., Pittsburg.
C. C. Young, 1909, chemist State Water Survey, Lawrence.

II.

CHEMICAL AND PHYSICAL PAPERS.

1. "OCCURRENCE OF MANGANESE IN WATER."
By C. C. YOUNG, University of Kansas, Lawrence.
2. "ON THE COLORING MATTER IN FRUIT JUICES."
By E. H. S. BAILEY and E. L. TAGUE, University of Kansas, Lawrence.
3. "RECENT METHODS IN ELEMENTARY ORGANIC ANALYSIS."
By O. S. GRONER, Ottawa University, Ottawa.
4. "LOCO WEED AND LOCO POISON."
By L. E. SAYRE, University of Kansas, Lawrence.
5. "ANALYSIS OF FOOD ACCESSORIES UNDER THE FOOD-AND-DRUGS LAW."
By L. E. SAYRE, University of Kansas, Lawrence.
6. "MAXWELL'S METHOD OF COMPARING AN ELECTROSTATIC CAPACITY
WITH SELF-INDUCTANCE."
By J. A. SHIRK, Ottawa.
7. "THE CIRCLE THAT IS NOT A CIRCLE."
By E. C. WARFEL, Wamego.

III.

GEOLOGICAL PAPERS.

1. "IS THE DAKOTA FORMATION UPPER OR LOWER CRETACEOUS?"
By J. C. TODD, University of Kansas, Lawrence.
2. "IN THE NIOBRARA AND LARAMIE CRETACEOUS."
By CHARLES H. STERNBERG, Lawrence.
3. "A DESCRIPTION OF THE CHANGES IN THE COTTONWOOD LIMESTONE
SOUTH OF COTTONWOOD FALLS, KAN."
By J. A. YATES, Manual Training Normal School, Pittsburg.
4. "AN ESKER AT MASON, MICH."
By L. C. WOOSTER, State Normal School, Emporia.
5. "AN EMBRYONIC PLESIOSAURIAN PROPODIAL."
By ROY L. MOODIE, University of Lawrence, Kansas.

IV.

BIOLOGICAL PAPERS.

1. "DESCRIPTION OF A NEW FLY OF THE FAMILY DOLICHOPODIDÆ, WITH REMARKS AND CORRECTIONS OF PRECEDING PAPERS."
By E. S. TUCKER, Bureau of Entomology, U. S. Department of Agriculture.
2. "ADDITIONS TO THE LIST OF KANSAS COLEOPTERA FOR 1909."
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